THE USE OF MICROFLUIDIC SYSTEMS IN THE ELECTROCHEMICAL DETECTION OF TARGET ANALYTES

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Figure (1) depicts some preferred embodiments of the invention. Figure (1A) depicts a solid support (5) that has a sample inlet port (10), a first microchannel (15), a storage module (25) (for example, for assay reagents) with a second microchannel (20). The second microchannel (20B), may be in fluid contact directly with the detection module (30) comprising a detection electrode (35), or (20A), a self-assembled monolayer and a binding ligand. Figure (1B) depicts a sample handling well (40) and a second storage well (25A) with a microchannel (20) to the sample handling well (40). For example, the sample handling well (40) could be a cell lysis chamber and the storage well (25A) could contain lysis reagents. Figure (1C) depicts a sample handling well (40) that is a cell capture or enrichment chamber, with an additional reagent storage well (25B) for elution buffer.; Figure (1D) depicts the addition of a reaction module (45), with a storage module (25C), for example for storage of amplification reagents. Optional waste module (26) is connected to the reaction module (45) via a microchannel (27). All of these embodiments may addtionally comprise valves, waste wells, and pumps, including additional electrodes.